Amana Technical Information—Electric Range

ARR6400 P1142670N, P1143415N, P1143432N, P1143457N, P1143607N, P1143640N, P1143653N, P1143674N

ART6510 P1143460N, P1143469N, P1143482N, P1143611N, P1143630N, P1143657N

- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- This technical sheet replaces RT2320003 Rev. 8.
- Refer to Service Manual RS2320004 for detailed installation, operating, testing, troubleshooting, and disassembly instructions.
- Refer to Parts Manual RP2320040 for part number information.

⚠ CAUTION

All safety information must be followed as provided in Service Manual RS2320004.

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven before servicing, unless testing requires it.

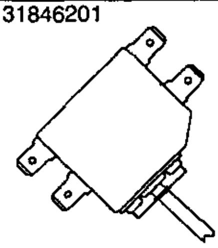
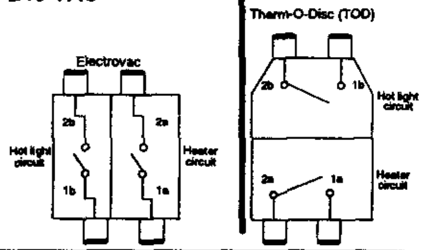
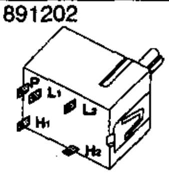
Models	**ARR6400**	**ART6510**
Power Source		
Electrical rating	240/208 V 13.8 kW/10.4 kW	240V 12.9 kW
Amperage	50 Amp max.	50 Amp max.
Frequency	60 Hz	60 Hz
Element Wattage @ 240/208 V		
6 inch ribbon radiant		1,200
7 inch ribbon radiant		1,500
8 inch ribbon radiant		2,000
9 inch ribbon radiant		2,500
Two 6 inch coils	1,500/*	
Two 8 inch coils	2,600/*	
Oven Wattage @ 240/208 V		
Bake	2,500/*	2,500
Broil	3,000/*	3,000
Oven Interior Dimensions in. (cm)		
Height	16 (41)	16 (41)
Width	23 (58)	23 (58)
Depth	17 1/2 (45)	17 1/2 (45)
Product Exterior Dimensions in. (cm)		
Height overall	47 (119)	47 (119)
Width	30 (76)	30 (76)
Depth oven door closed with handle	28 1/4 (72)	28 1/4 (72)
Clearance oven door	22 (56)	22 (56)
Height of cooktop	36 (91)	36 (91)
Weight lbs. (kg)		
Approximately shipping weight	171 (78)	171 (78)
Cooktop Surface - Upswept		
Recessed porcelain	X	—
Lift-up cooktop with support rods	X	—
Interior oven light	X	X
Large window frameless glass door	X	X
Removable fullwidth storage drawer	X	X
Two oven racks 5 - positions	X	X
Porcelain burner bowls	X	—
Porcelain coated backguard	X	—
Glass backguard	—	X
Spillsaver™ cooktop	—	X
Touchmatic ERC	X	X

* – Rating of 208 VAC is approximately 80% of 240 VAC value.

Component Testing Procedures

⚠ WARNING

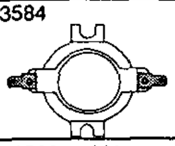
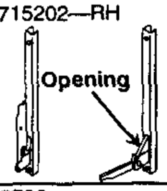
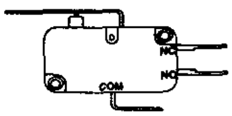
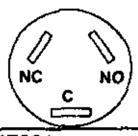
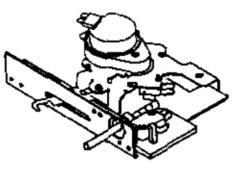
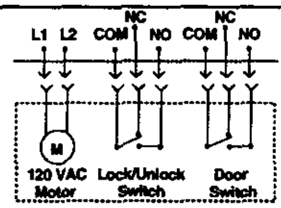
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Illustration	Component	Test Procedure	Results
31823701	Oven light socket	Test continuity of receptacle terminals.	Indicates continuity with bulb screwed in. If not replace.
31722801	Oven indicator light and Surface indicator light	Remove one lead from switch terminal and measure resistance across terminals. Measure voltage at indicator light.	Switch closed: 0 Ω Switch open: Infinite resistance If voltage is present and light does not operate. Replace light. If no voltage is present at indicator light check wiring.
301491	Rocker switch	Measure continuity of switch positions: Closed Open	 Continuity, if not replace. Infinite, if not replace.
31734602—1500 W 31734606—2600 W	Coil surface elements 6″ and 8″	Test continuity of terminals.	Continuity, if not replace.
31730101	Coil surface terminal block	Remove element and turn surface element on and test for voltage at terminal block.	240 VAC
31794701-1200 W 31794601-1500 W 31794501-2000 W 31794801-2500 W	Ribbon radiant elements	Remove one wire lead from element and measure resistance of the element.	Continuity, if not replace. 1200W: 45 to 51 Ω 1500W: 36 to 41 Ω 2000W: 27 to 31 Ω 2500W: 21 to 25 Ω
31846201 	Ribbon surface thermal limiter/hot light switch	Turn surface element on and test for voltage. See wiring diagram and schematic. 1a–2a 240 VAC 1b–2b 120 VAC Disconnect leads and measure resistance on the following: 1a–2a room temperature–continuity 1b–2b room temperature–infinite	240 VAC 
059552	Bake element	Disconnect wire leads to element and measure resistance of terminals. Measure voltage at bake element.	Continuity, approximately 23 Ω, if not replace. 240 VAC, see wiring diagram for terminal identification. If no voltage is present at bake element check wiring.
061732	Broil element	Disconnect wire leads to element and measure resistance of terminals. Measure voltage at broil element.	Continuity, approximately 19 Ω, if not replace. 240 VAC, see wiring diagram for terminal identification. If no voltage is present at broil element check wiring.
314907	Oven temperature sensor	Measure resistance.	Approximately 1100 Ω at room temperature 75°F.
31891202  	Infinite switch	Remove wiring from terminals H1 and H2. Connect Volt ohms meter to H1 and H2. Measure the following for voltages at LO, MED, HI: H1 to H2	**Time On** / **Time Off** LO 5% 95% MED (4-5) 50% 50% HI 100% 0% 240 VAC, if not replace switch.

Component Testing Information

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Illustration	Component	Test Procedure	Results
053584 	Control limit	Normally Closed Verify proper operation. Closed 245°F Open 275°F	Continuity Infinite If open at room temperature, replace.
31715201—LH 31715202—RH 	Hinge	Carefully open the hinge fully, and insert a wooden dowel or screwdriver bit into opening. Remove top and bottom screws securing hinge. Slide hinge top towards rear of unit and guide hinge out through frame opening or storage drawer.	**⚠ CAUTION** Do not place hands in hinge area when oven door is removed. Hinge can snap closed and pinch hands or fingers.
065780 	Door lock switch	Switch connection in following positions: Unlocked Locked Set ERC to Clean	 COM-NO=Open, COM-NC=Closed COM-NO=Closed, COM-NC=Open Lock LED should flash Lock LED and Oven LED should illuminate, If Lock LED does not illuminate, check switch and wiring.
305797 	Door plunger switch	Remove switch from unit and measure the following points: C-NC C NO	 Plunger in infinite, Plunger out continuity. Plunger in continuity, Plunger out infinite.
31797301 	Autolatch assembly with door plunger switch	Disconnect wires and test for continuity per diagram.	

Component Testing Procedures

⚠ WARNING

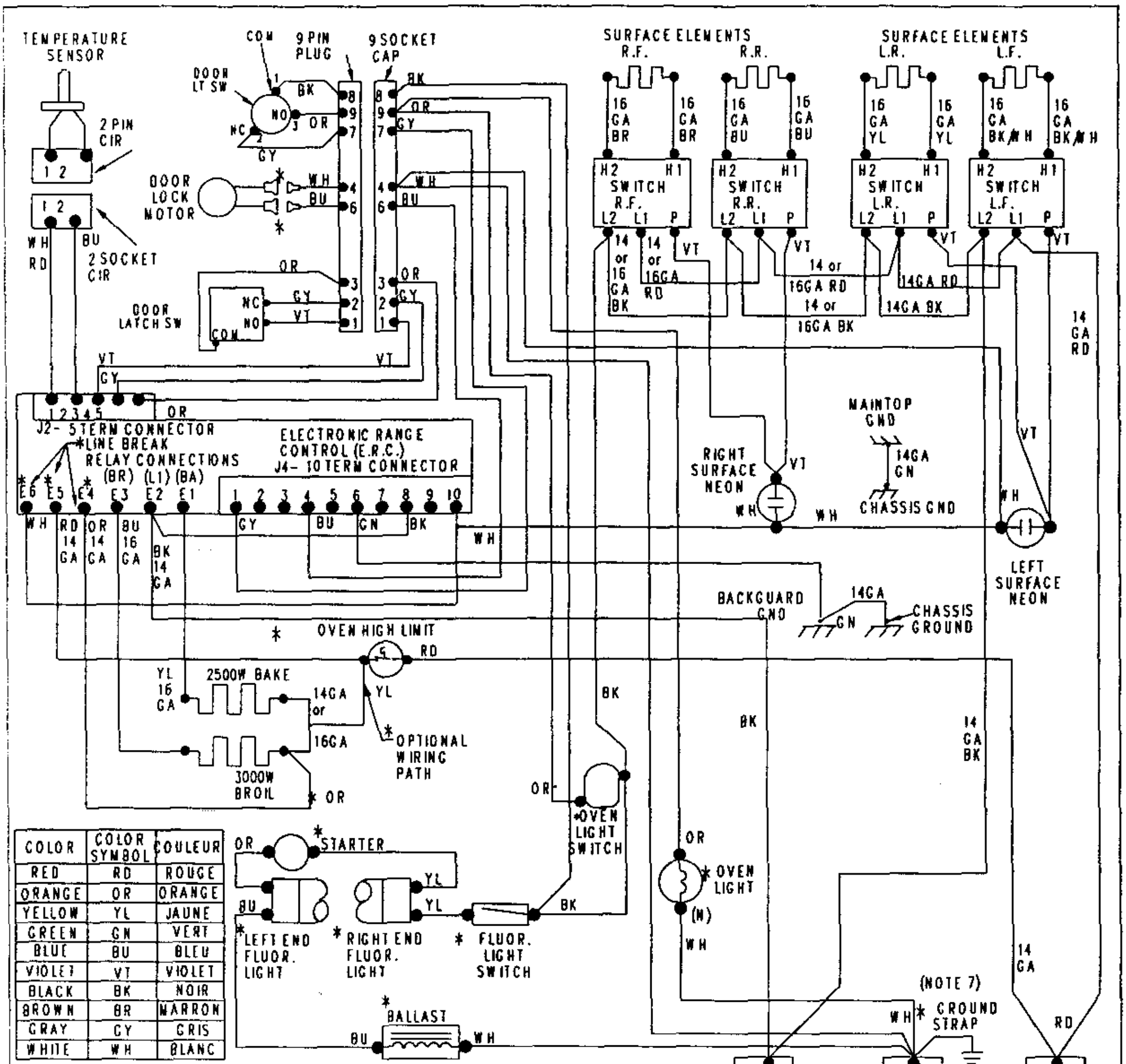
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Illustration	Component	Test Procedure	Results
	ERC3 - Touchmatic electronic range control	**F1**—Shorted pad button. **F2**—Oven cavity over temperature.	Verify actuator operation. Check sensor wiring, sensor, and temperature limiter.
		F3—Open circuit in oven temperature sensor circuit.	Check sensor resistance and wiring.
		F4—Shorted circuit in oven temperature circuit.	Check sensor resistance and wiring.
		F5—Defective watchdog circuit in control.	Replace ERC3.
		F7—Failure of door lock switch sensing with door locked.	Check latch switch and door motor.
		F9—Failure of door lock switching sensing with door unlocked.	Check latch switch and door motor.
		DOOR—Lock status is not sensed within 20 seconds of energizing door lock relay.	Verify operation of door latch switches.
ERC3 Controlled	Oven temperature adjustment	Push ***BAKE*** pad. Push ***SLEW*** pad until an oven temperature greater than 500°F displays. Immediately push and hold ***BAKE*** pad until "00" displays, approximately 5 seconds. To decrease oven temperature (for a cooler oven), Push ***SLEW*** pad until negative numbers appear. Oven can be adjusted from -05° to -35° lower. To avoid over adjusting oven move temperature -5° each time. To increase oven temperature (for a warmer oven), Push ***SLEW*** pad until positive numbers appear. Oven can be adjusted from 5° to 35° higher. To avoid over adjusting oven move temperature 5° each time. Push ***OVEN CANCEL*** button. Temperature adjustment will be retained even through a power failure.	While increasing or decreasing oven temperature, this does not affect self-cleaning temperature.
ERC3 Controlled	Twelve hour off	Control will automatically cancel any cooking operation and remove all relay drives 12 hours after the last pad touch.	
ERC3 Controlled	Child lock out	Control input features will be disabled and display will indicate "OFF", when ***BAKE*** and ***CLOCK*** are pushed simultaneously and held for 5 seconds. Control will return to normal operation by repeating the procedure.	
ERC3 Controlled	Drive requirements Based on a 60 second cycle.	Bake	100% bake 10% broil
		Broil	0% bake 100% broil HI 0% bake 93% broil 5 0% bake 87% broil 4 0% bake 80% broil 3 0% bake 73% broil 2 0% bake 67% broil 1
		Clean Stage 1	Time controlled 15 minutes 0% bake 100% broil.
		Stage 2	Time controlled 100% bake 10% broil.
		Lock light	On at the start of the clean cycle. Off at approximately 400°F ± 25°F.

Wiring Diagram and Schematic

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COLOR	COLOR SYMBOL	COULEUR
RED	RD	ROUGE
ORANGE	OR	ORANGE
YELLOW	YL	JAUNE
GREEN	GN	VERT
BLUE	BU	BLEU
VIOLET	VT	VIOLET
BLACK	BK	NOIR
BROWN	BR	MARRON
GRAY	GY	GRIS
WHITE	WH	BLANC

NOTES:

1. ALL INTERNAL WIRES ARE 18GA, 150 °C XL UNLESS OTHERWISE NOTED.
2. ALL REPLACEMENT WIRES MUST HAVE SAME RATING AS ORIGINAL WIRES.
3. SEE SERIAL PLATE FOR INPUT VOLTAGE/WATTAGE RATING.
4. *DENOTES OPTIONAL EQUIPMENT AND RELATED WIRING NOT SUPPLIED ON SOME MODELS.
5. ELEMENT WATTAGES VARY BY MODEL. REPLACEMENT ELEMENTS MUST HAVE SAME WATTAGE AS ORIGINAL ELEMENTS.
6. FOR RANGE INSTALLATION, USE COPPER WIRE ONLY.
7. GROUND STRAP NOT USED FOR FOUR WIRE INSTALLATIONS.

WARNING -ELECTRICAL SHOCK HAZARD -DISCONNECT POWER AT MAIN FUSE OR CIRCUIT BREAKER BEFORE SERVICING. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

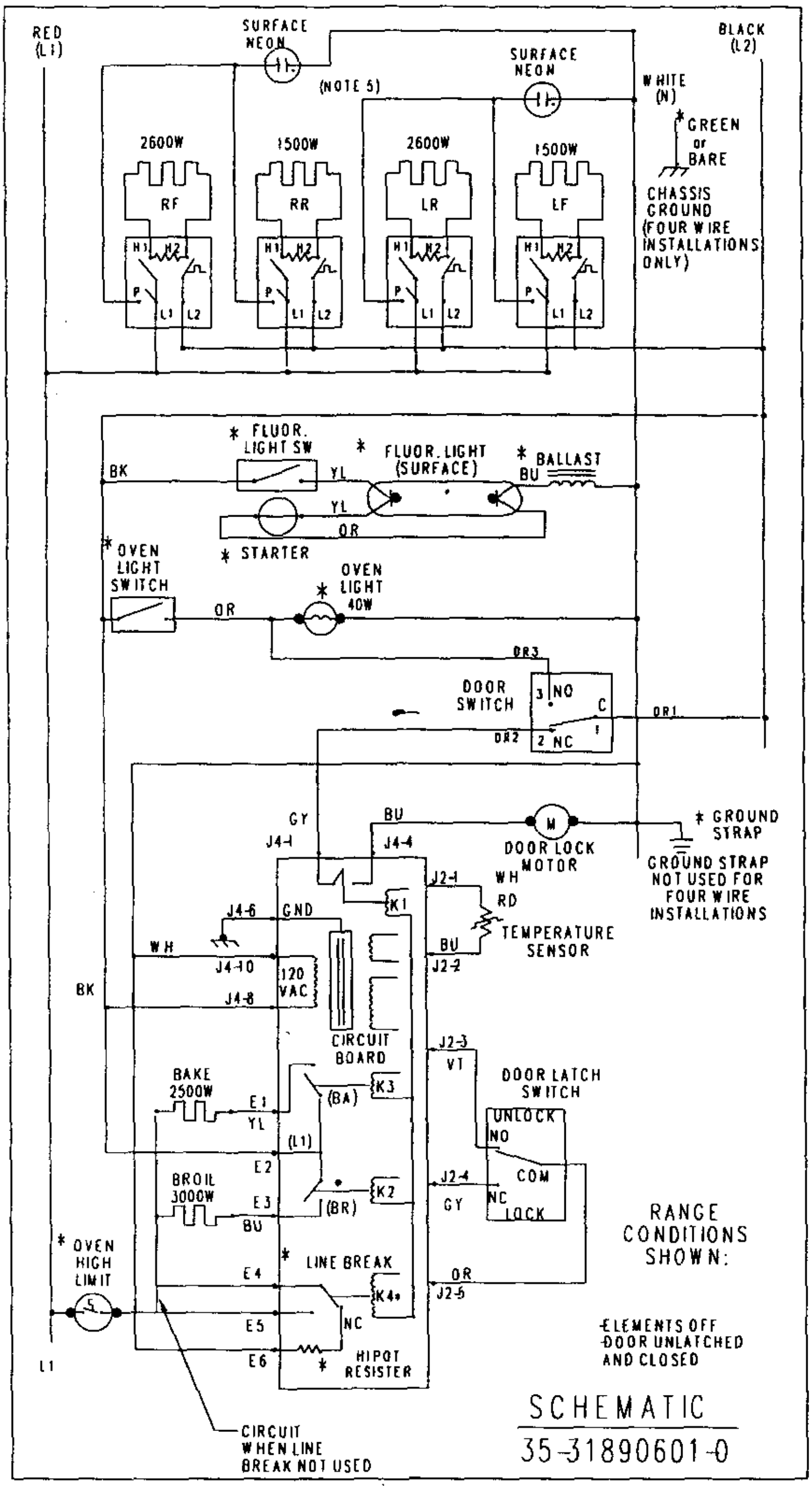
DANGER -RISQUE DE CHOC ELECTRIQUE -DEBRANCHER L'ALIMENTATION ELECTRIQUE. AVANT D'ENTRETENIR CETTE UNITE. LE MANQUE DE RESPECT DE CETTE CONSIGNE POURRAIT AVOIR COMME RESULTAT UNE BLESSURE GRAVE OU MORTELLE.

ARR6400

Wiring Diagram and Schematic

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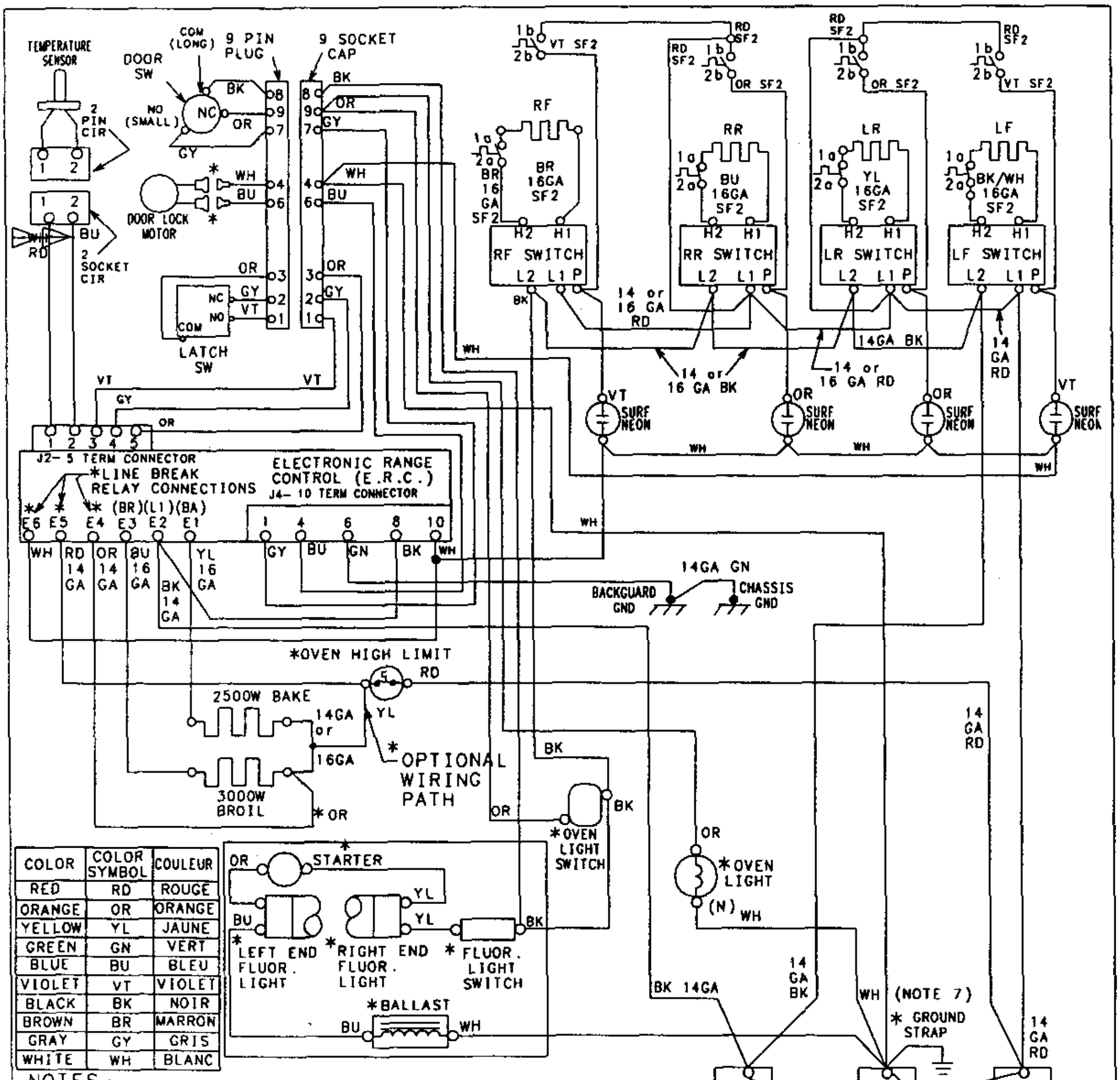


ARR6400

Wiring Diagram and Schematic

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BROWN	BR	MARRON
GRAY	GY	GRIS
WHITE	WH	BLANC

NOTES:

1. ALL INTERNAL WIRES ARE 18GA, 150°C XL UNLESS OTHERWISE NOTED. SF2 IS SEW-2/SF2 200°C.
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3. SEE SERIAL PLATE FOR INPUT VOLTAGE/WATTAGE RATING.
4. *OR (——)DENOTES OPTIONAL EQUIPMENT AND RELATED WIRING NOT SUPPLIED ON SOME MODELS.
5. ELEMENT WATTAGES VARY BY MODEL. REPLACEMENT ELEMENTS MUST HAVE SAME WATTAGE AS ORIGINAL ELEMENTS.
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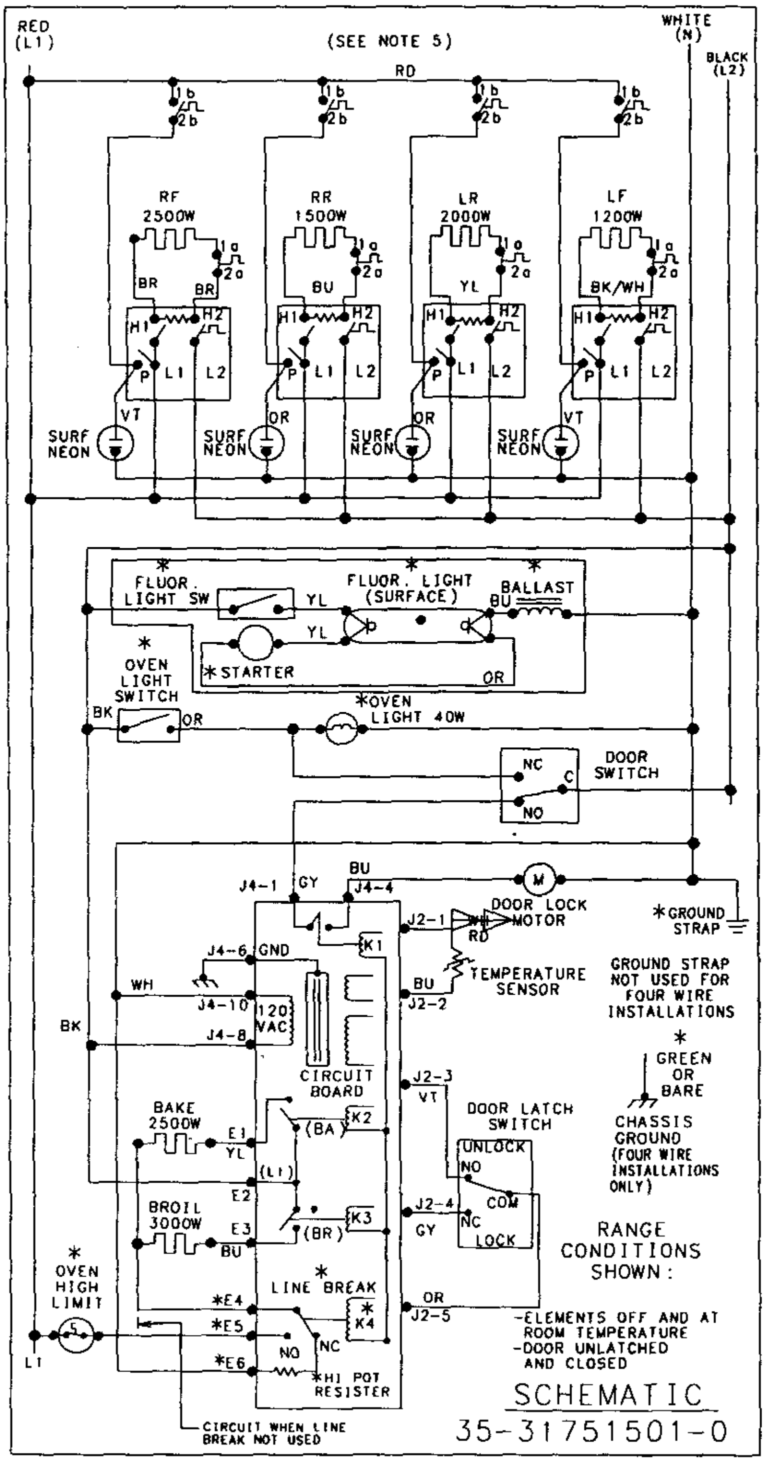
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ART6510

Wiring Diagram and Schematic

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ART6510